

paragraph (3) of the Office Action. Reconsideration of this rejection is requested for at least the following reasons.

The presently claimed invention is directed to laminates which include, inter alia, at least one non-woven layer of organic synthetic filaments and at least one pre-consolidated woven web or scrim of glass fibers, the non-woven synthetic layer and woven glass fiber web or scrim being bound by needling such that a part of the organic filaments penetrate through the laminate and emerge at the lower surface thereof and lie adjacent thereto, wherein the laminate is subjected to a final consolidation with an acrylate or a styrene binder. The resultant laminated product exhibits improved mechanical properties, dimensional stability, resistance to delamination and fire resistance. The patents relied upon by the Examiner in the rejection of claims 1, 2, 4 and 7-10 do not disclose or suggest the laminates of the invention.

Heidel '629 discloses a laminate consisting of one non-woven layer of synthetic organic fibers and one non-woven layer of glass fibers needled together and consolidate with a melamine-formaldehyde pre-condensate. The use of a non-woven glass fiber layer and a melamine-formaldehyde condensate for final consolidation are critical to attaining the benefits of the invention as set forth in column 2, lines 3-13 of Heidel '629:

The present invention thus relates to a carrier web for the production of roofing and sealing webs, which does not have the disadvantages of the known materials and in which, rather, a high mechanical stability, including at elevated temperatures, is combined with very good burning properties.

The carrier web according to the invention consists of a glass fiber mat and a mat of synthetic fibers which are needled to one another and end-consolidated with a polymer-

free low-formaldehyde melamine-formaldehyde precondensate.

The laminates disclosed in Heidel '629 thus differ from those defined in present claim 1 in at least three important aspects:

- (a) The reference requires a non-woven glass fiber layer;
- (b) the reference requires a melamine-formaldehyde pre-condensate binder for final consolidation;
- (c) The reference does not needle together both layers such that a part of the organic filaments penetrate through the laminate and emerge at the lower surface and lie adjacent thereto.

Hartmann '651 discloses roofing and sealing products impregnated with bitumen and having a carrier material composed of at least one non-woven layer of bonded organic fibers. The reference discloses that, as an optional feature, the carrier may have at least one fabric layer of inorganic material. Suitable optional layers include "less elastic carriers, for example, spun-glass fabrics or woven glass fabrics" (column 3, lines 67-68). The carrier layers are not needed. Moreover, Hartmann '651 discloses that woven glass fabrics for roofing materials have decided disadvantages: elongation at break is very low and the "dimensional changes cause by dilatation lead as a rule to cracks because of the lack of elasticity and a low capacity to accommodate working" (column 1, lines 47-51); carrier materials like woven glass do not have "the required temperature-independent elasticity. As a result, cracks and leaks can again occur on the roof due to thermal dilatation" (column 1, line 66 to column 2, line 3). These statements in Hartmann '651

clearly would act to discourage those of ordinary skill from using woven glass layers in roofing laminates.

The Examiner states on page 3 of the Office Action that those of ordinary skill would be motivated by Hartmann '651 to replace the non-woven glass fiber layer of Heidel '629 with a woven glass fiber layer to obtain "increased dimensional stability and good workability." Respectfully, applicants completely disagree. This position is contrary to the statements in Hartmann '651 as quoted above.

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.

The motivation to modify the relied on prior art must flow from some teaching in the art that suggests the desirability or incentive to make the modification needed to arrive at the claimed invention. *In re Napier*, 55 F.2d 610, 613; 34 U.S.P.Q.2d 1782, 1784 (Fed. Cir. 1995). Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching, suggestion or incentive supporting the claimed combination. *In re Geiger*, 815 F.2d 686, 688; 2 U.S.P.Q.2d 1276, 1278 (Fed. Cir. 1987). As stated in *In re Kotzab*, 217 F.3d 1365, 1370, 55 SPQ2d 1313, 1316-17 (Fed. Cir. 2000),

[m]ost if not all inventions arise from a combination of old elements. Thus, every element of a claimed invention may often be found in the prior art. However, identification in the prior art of each individual part claimed is insufficient to defeat patentability of the whole claimed invention. Rather, to establish obviousness based on a combination of the elements disclosed in the prior art, there must be some motivation, suggestion or teaching of the desirability of making the specific combination that was made by the applicant [citations omitted].

Applicants submit that there is no suggestion in Heidel '629 or Hartmann '651 which would motivate those of ordinary skill to replace the non-woven glass fiber layer required in Heidel '629 with the woven layer of glass fibers described merely as an optional component in Hartmann '651. The motivation suggested in the Office Action (increased dimensional stability) is contrary to the statements in Hartmann '651 regarding the disadvantages of using woven glass layers.

Further, there would be no reasonable expectation of success that replacement of the non-woven glass fiber layer with a woven layer would result in laminates having the properties and characteristics desired by Heidel '629. It is well settled that if modification proposed by the Examiner would render the prior art invention unsatisfactory for its intended purpose, then there is no motivation make the desired modification. (In re Gordon, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984)). Modifying the laminates of Heidel '629 in the manner suggested by the Examiner would render the invention of patentees unsuitable for its intended purpose.

The Office Action does not discuss the significance of Schops '657. However, Schops '657 does not supply the aforementioned deficiencies in the combined disclosures of

Heidel '629 and Hartmann '651. The laminates of Schops '657 include two non-woven layers of synthetic fibers and an intermediate reinforcing layer of laid fibers which may be glass. There is no suggestion in Schops '657 that non-woven glass fiber layers may be replaced by a layer of woven glass fibers.

For at least the reasons discussed above, the §103(a) rejection over Heidel '629 in view of Hartmann '651 and Schops '657 should be withdrawn. Such action is respectfully requested.

Claims 5, 6 and 11-13 have been rejected under 35 U.S.C. §103 as unpatentable over Heidel '629 and Hartmann '651 further in view of Schops '657 for the reasons expressed in paragraph (4) of the Office Action. Reconsideration and withdrawal of this rejection is respectfully requested for at least the following reasons.

The deficiencies of these three patents have been discussed above in connection with the rejection of claims 1, 2, 4 and 7-10. Thus, Heidel '629 requires a non-woven glass fiber layer and a melamine-formaldehyde condensate. There is no disclosure in Hartmann '651 which would motivate one of ordinary skill in the art to replace the non-woven glass fiber layer of Heidel '629 with a woven glass fiber layer. There is no disclosure in Schops '657 which would motivate those of ordinary skill to replace the non-woven glass fiber layer and melamine-formaldehyde condensate of Heidel '629 with a woven layer and a styrene copolymer. There is no disclosure in any of these patents of needling the layers together in such a manner that part of the organic filaments penetrate through the laminate and emerge at the lower surface and lie adjacent thereto.

In view of the lack of any suggestion in the cited art of laminates having the requisite features specified in applicants' claimed invention, the combined disclosures of Heidel '629, Hartmann '651 and Schops '657 does not establish a *prima facie* case of obviousness. Accordingly, the §103(a) rejection of claims 5, 6 and 11-13 should be withdrawn.

Claim 3 was rejected under 35 U.S.C. §103(a) as unpatentable over Heidel '629 and Hartmann '651 and further in view of U.S. Patent 5,616,395 to Baravian et al for the reasons expressed in paragraph (5) of the Office Action. Claim 14 was rejected under 35 U.S.C. §103(a) as unpatentable over Heidel '629, Hartmann '651 and Schops '657 and further in view of U.S. Patent 4,816,327 to Bintersley et al for the reasons set forth in paragraph (4) ((6)?) on page 7 of the Office Action. Claim 15 stands rejected under 35 U.S.C. §103(a) as unpatentable over Heidel '629 and Hartmann '651 and further in view of U.S. Patent 5,571,596 to Johnson for the reasons set forth in paragraph (5) ((7)?) on page 8 of the Office Action. Reconsideration and withdrawal of all of these rejections is respectfully requested for at least the following reasons.

Baravian '395, Bintersley '327 and Johnson '596 have been applied because they allegedly disclose the features of dependent claims 3, 14 and 15. The disclosures of these patents, applied individually or collectively, do not supply the deficiencies of the basic §103 rejection relying on the combination of Heidel '629, Hartmann '651 and Schops '657 as fully discussed above. Accordingly, the various §103 rejections which rely on Baravian '395 or Bintersley '327 or Johnson '596 do not establish a *prima facie* case of obviousness and these rejections should be withdrawn.

From the foregoing, further and favorable action in the form of a Notice of Allowance is believed to be next in order, and such action is earnestly solicited. If there are any questions concerning this paper or the application in general, the Examiner is invited to telephone the undersigned at (703) 838-6683 at her earliest convenience.

Respectfully submitted,

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